35594-MP

0.3M Pixel ArduCam OV7670

FEATURES

Small Color camera for the Arduino microcomputers with a high quality F1.8 / 6mm lens. High sensitivity for low-light operation.
Can be used in Arduino, Maple, ChipKit, STM32, ARM, DSP, FPGA platforms.

NOTE: Camera requires you to Write or Locate & download software Drivers for your host microcontroller
Power: 3.3VDC
Sensor: 1/6 inch
Resolution 640×480 VGA
Image sizes: VGA, CIF, and any size scaling down from CIF to 40×30
Output support for Raw RGB, RGB (GRB 4:2:2, RGB565/555/444), YUV (4:2:2) and YCbCr (4:2:2) formats
Standard SCCB interface compatible with I2C interface
VarioPixel® method for sub-sampling
Automatic Functions including:
Automatic Exposure Control (AEC), Automatic Gain Control (AGC),
Automatic White Balance (AWB), Automatic Band Filter (ABF),
Automatic Black-Level Calibration (ABLC)
Image Controls: color saturation, hue, gamma, sharpness (edge enhancement), and anti-blooming
ISP includes noise reduction and defect correction
Supports LED and flash strobe mode & scaling
Lens shading correction
Flicker (50/60 Hz) auto detection
Saturation level auto adjust (UV adjust)
Edge enhancement level auto adjust
De-noise level auto adjust
Connection 2x9 (18) Pin 0.1" Pitch Header

ALSO AVAILABLE: Acrylic Mounting Stand: 35499 HD

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GENERAL

Fig. 1 show a basic camera based system. The camera module is powered from a single +3.3V power supply. An external oscillator provide the clock source for camera module XCLK pin. With proper configuration to the camera internal registers via I2C bus, then the camera supply pixel clock (PCLK) and camera data (Data[9-0]) back to the host with synchronize signal like HREF and VSYNC.

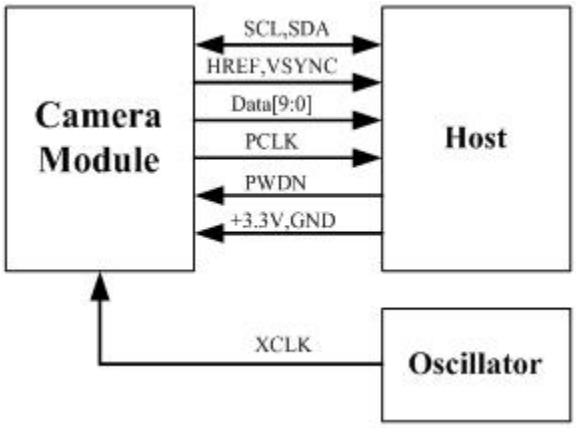

FIGURE 1

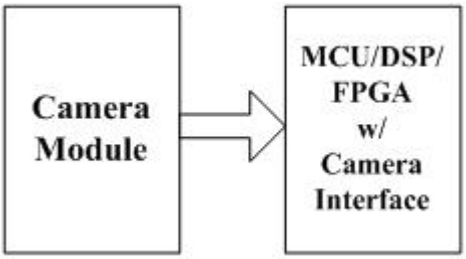

FIGURE 2

Some host may have an integrated camera interface. The STM32F2 or STM32F4 series MCUs, or ARM9/11 have dedicated camera ports. DPS like TI TMS320DM series, as well as some FPGAs special logic for camera applications that the user can design. The typical connection between these system and camera module are shown in Fig. 2.

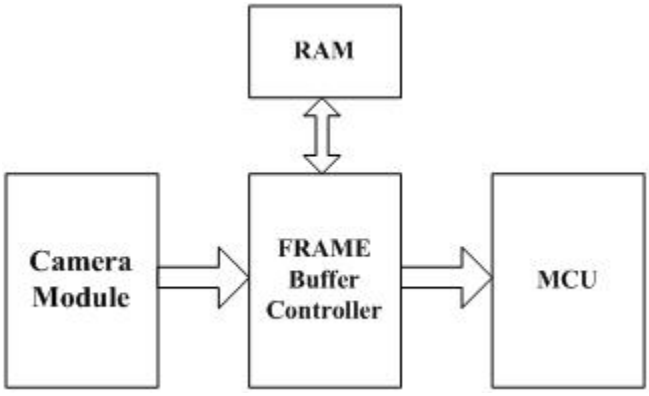

FIGURE 3

Fig. 3 showsbasics for the host that doesn't have a dedicate camera interface, additional hardware is needed. You need to buffer a entire frame before you can read them out when using a low speed MCUs. An example the ArduCAM shield has additional hardware that can be connected to the UNO or Mega board.user can take a photo or something like that easily.

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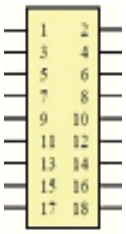
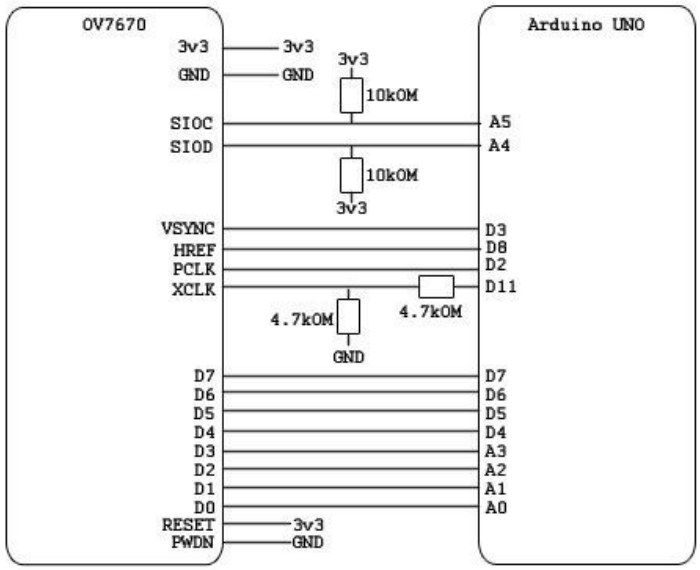
HEADER PINS



PIN	FUNCTION	DESCRIPTION	PIN	FUNCTION	DESCRIPTION
1	Vcc	3.3V Power	2	Gnd	Power Ground
3	SIOC/SCL	Serial Clock	4	SDATA/SIOO	Serial Data I/O
5	VSYNC	Frame Valid (Active High)	6	HREF	Data Valid (Active High)
7	PCLK	Pixel Clock from Sensor	8	XCLK	Master Clock to Sensor
9	D7	MSD Pixel Data Output	10	D6	Pixel Data Output
11	D5	Pixel Data Output	12	D4	Pixel Data Output
13	D3	Pixel Data Output	14	D2	Pixel Data Output
15	D1	Pixel Data Output	16	D0	LSD Pixel Data Output
17	RESET	Reset Sensor (Active Low)	18	PWDN	Power Down (Active high)

ARDUINO CONNECTIONS



USEFULL LINKS

https://www.instructables.com/id/OV7670-Arduino-Camera-Sensor-Module-Framecapture-T/
http://www.arducam.com/products/camera-breakout-board/0-3mp-ov7670/
https://github.com/ArduCAM/Arduino
http://www.arducam.com/downloads/ArduCAM_v3.3.1.zip
https://www.arduino.cc/en/main/software